

# Systems Management and the Plan Implementation Process in Kenya

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## INTRODUCTION

One of the foremost lessons to emerge from the experience of the first development decade was the practical essentiality of plan implementation over formal plan formulation. The re-orientation arising from this experience is now evident in the increasing emphasis on the appropriate mechanisms of development programme execution now coming from international development agencies, Governments and academics. The symposium of the international planning experts which met at Sussex University in 1969 to discuss the 'crisis in planning' produced basic consensus on the need for rethinking and restructuring of plan implementation machinery.<sup>1</sup> Successful projects implementation has now become the catchword in the development planning literature. In the African context, this trend is highlighted by G. K. Helleiner's proposal that planning in the 1970s must go "beyond growth rates and plan volumes".<sup>2</sup> Most of the new plan volumes stress the same inclination.

On the principle that complex problems call for sophisticated solutions, we have witnessed a succession of supposedly rational, comprehensive, omniscient, systems-oriented techniques borrowed from the frontiers of management science and intended to invigorate the plan implementation process. At the close of the development decade, Easman and Montgomery, who had been involved in US technical assistance, were advocating the 'systems approach' to plan execution in view of its "overall detailed identification of interrelated factors in a complex system of action; precise time phasing of related activities and control operations through the use of modern high speed communication and reporting instruments".<sup>3</sup> Later, and in what appears to be a pioneering text, Earl M. Kulp developed a lengthy system model for rural plan implementation.<sup>4</sup>

The Kenya Government among others has enthusiastically espoused the

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1 The proceedings are published as *The Crisis in Planning* (Vols. I and II) edited by Michael Faber and Dudley Seers (Sussex University Press, 1972).

2 G. K. Helleiner, "Beyond Growth Rates and Plan Volumes—Planning in Africa in the 1970's," *Journal of Modern African Studies*, Vol. 10, No. 3 (1972), pp. 333-55. See also Gerald M. Meier, "The Development Decade in Perspective," in R. Robinson, ed., *Developing the Third World* (London: Cambridge University Press, 1971).

3 M. J. Easman and J. D. Montgomery, "Systems Approaches to Technical Cooperation: The role of development administration," *Public Administration Review*, Vol. 29, No. 5 (1969), p. 518.

4 Earl M. Kulp, *Rural Development Planning: Systems Analysis and Working Methods* (New York: Praeger, 1970). See also George Chadwick, *A Systems View of Planning* (Oxford: Pergamon Press, 1971).

new management techniques to rectify the conventional inadequacies in development administration. The now famous Ndegwa Commission on the public service structure recommended the adoption of Management by Objectives (MBO) and Organizational Development (OD) techniques in the public service. Further, where field administration for development is concerned, the Commission recommended a systems management approach to development programme implementation. To this effect a Los Angeles management consultancy outfit was hired to draft a systems management blueprint for implementation purposes.<sup>5</sup> Currently, the Kenyan Ministry of Finance and Planning is engaged in introducing a variant: Planning, Programming, Budgeting System (PPBS).

The proclivity for a programmed or systemic style of problem solving, however, is most pronounced in the progress of the Special Rural Development Programme (SRDP) which was initiated by the Kenya Government in 1970. Under the auspices of the Ministry of Finance and Planning, Deryke Belshaw and Robert Chambers, then at the University of Nairobi, both developed a system framework for the management of rural development.<sup>6</sup> The framework attempts to comprehend rural development activity under a six basic procedural system, amply illustrated with multicoloured box diagrams and seventeen exotic abbreviations. Of the six procedures, PIM (Programming and Implementation Management) has been in operation in the SRDP areas since mid-1971.

This paper attempts to assess how appropriate are the various approaches of systems programming in the plan implementation process. The limits which uncertainty imposes on general development policy are used as a point of departure. Subsequently, the process of development administration in Kenya is used to illustrate the kind of administrative behaviour which results from this. The latter section of the paper attempts to fathom the logic underlying such behaviour, while at the same time, it makes suggestions by which the latent advantages in the process can be harnessed toward better plan implementation.

#### UNCERTAINTY AND DEVELOPMENT POLICY

At the minimum, any model of perfect programmed policy execution calls for a rare degree of certainty; a situation in which the precise distribution of probabilities is known. Thus, first the exact causal relationship between the policy and the consequences of its implementation must be known. From this the appropriate operational activities can be deduced. Secondly, the behaviour of exogenous variables must be either accurately predictable or at least, constant. If conditions are otherwise, the operating agency will be compelled

5 Republic of Kenya, *Report on the Commission of Inquiry: Public Service Structure and Remuneration Commission*, Chairman, D. N. Ndegwa (Nairobi: Government Printer, 1971).

6 Deryke Belshaw and Robert Chambers, *A Management Systems Approach to Rural Development* (Nairobi, IDS Discussion Paper No. 161), and *PIM: A Practical Management System for Implementing Rural Development* (Nairobi: IDS Discussion paper No. 162). Another attempt to formulate a systematic, procedural approach to the SRDP implementation is the 'functional model' given in *An Overall Evaluation of the SRDP* (Nairobi: IDS, 1972), p. 11.

to adapt to unpredictable environmental change by deviating from programmed procedures or even by goal alteration. Yet, ironically it is for situations which contravene these basic preconditions that programmed implementation procedures are prescribed. For in the prevailing state of affairs, development projects are implemented with many uncertainties surrounding policy outcome and, in addition, with the possibility that any number of environmental variables might intervene. The situation is best described by Wolfgang Stolper as planning under 'comprehensive uncertainty'.<sup>7</sup>

Uncertainties surrounding the probabilities of development policy outcomes are seldom analysed. Although our knowledge of development economics has certainly increased over the last two decades, we are nowhere close to accurately predicting relationships between policy and outcome. As Tinbergen himself argues, "we simply do not know many of the causes leading to the development of a country with the result that a conscious development policy cannot be chosen with certainty".<sup>8</sup> In fact, the development literature itself is a welter of contradictory hypotheses and periodical re-orientations of emphasis. From Ragnar Nurkses's original stress on the primacy of capital formation we have come across an almost limitless range of policy prescriptions for development: industrialization; entrepreneurial development; social and cultural change; 'human investment'; export diversification; intermediate technology; planning; decentralized planning; rural development; stable politics, etc. The recent ILO report on *Employment, Incomes and Equality* in Kenya, flouts a good deal of hitherto unconventional beliefs on development policy.<sup>9</sup> Thus the 'informal sector' is now seen as a more potent employment and incomes generator than the formal capitalist and public sector; import substitution industrialization policy is seriously challenged; small scale business and agricultural units are found to be more productive and efficient than the larger enterprises. Over time then, the policies whose implementation is said to lead to development have come to span almost the entire range of human behaviour, a situation summed up by Caiden and Wildavsky to mean "do everything and do it at once".<sup>10</sup>

The incidence of the second type of uncertainty—that pertaining to the environment is not difficult to catalogue. One need look no further than the contemporary newspaper headlines. First, there is the category of unavoidable natural disasters like drought and flooding. Environmental uncertainty can also stem from the 'dependency' or neo-colonial economic relationships between the industrialized countries and the 'periphery': fluctuating primary commodity prices; deteriorating terms of trade; 'imported' inflation; monetary instability in the capitalist world prompting devaluations and revaluations of

7 Wolfgang Stolper, "The Limits of Comprehensive Planning under Comprehensive Uncertainty," University of Michigan, Centre for Research in Economic Development (Discussion paper No. 10).

8 Jan Tinbergen, *Development Planning* (London: Weidenfeld and Nicolson, 1967), p. 28.

9 International Labour Office, *Employment, Incomes and Equality* (Geneva, 1972). Hereafter, *The ILO Report*.

10 Naomi Caiden and Aaron Wildavsky, *Planning and Budgeting in Low Income Countries* (forthcoming 20th Century Fund Study).

reserve currencies. Lastly, uncertainty could also arise from the volatile nature of underdeveloped societies and polities. All these factors have very definite bearings on plan implementation processes. Foreign exchange shortages occur leading to capital import constraints, capital goods prices rise over budgeted levels, crop failures and famine call for the diversion of investment funds into consumption. In yet other instances, political and social upheavals lead to critical shortages in specialized manpower.

Although various approaches in statistical decision-making and game theory have attempted to deal with the issue of decision-making under uncertainty, the proponents of these strategies generally agree on their inapplicability to complex, collective policy choices. It is not easy to apply the solutions from welfare economics either. The problems of applying a normative theory of collective choice are well known.<sup>11</sup> The fact, then, is that development projects' implementation processes cannot be comprehended under such theoretical frameworks. The paucity of accurate information on the causal relationship between policy initiation and project output leads to decisions which are made with partial information. Project goals and strategies then crystallize in the light of additional knowledge and experience. Alternatively, this kind of uncertainty might be countered by fragmenting the problem into parts which can be adequately handled by sub-organizations. The incidence of environmental uncertainty dictates that organizations desist from long range commitments or plans into a future they cannot sufficiently decipher. Further, it also dictates that goals and procedures be constantly adapted to suit circumstances. Lastly, it calls for slack or spare resources to cope with unexpected demands and for the duplication of parts or functions which can substitute for each other in the event of unforeseen problems. Programme implementation under uncertainty is therefore a process of adaptive behaviour. Indeed the only pertinent issue is the optimum level of the foregoing administrative aberrations.<sup>12</sup> Any insistence that plan implementation processes follow once-and-for-all, standardized, systematic procedures is, under prevailing circumstances, a blueprint for disaster.

#### THE KENYAN EXPERIENCE

The inevitability of the eclectic, pragmatic and seemingly disorderly style of policy formation and execution, which we have already alluded to, is exemplified by Kenya's experience in development programme implementation over the last decade. No attempt is made to assert that the Kenyan experience is ideal, but it serves to highlight the pervasiveness of the development administration behaviour we have already indicated and which is typical of most developing countries.

11 An excellent summary is given by Richard Zeckhauser and Elmer Shaeffer, "Public Policy and Normative Economic Theory," in R. A. Bauer and K. J. Gergen, eds., *The Study of Policy Formation* (New York: The Free Press, 1968), pp. 27-101.

12 I can think of no better parallel to this than Albert O. Hirschman's 'Model of optimum disorderliness' in connection with the inevitable imbalances in national investment strategies. See his article, "The Strategy of Economic Development," in A. N. Agarwala and S. P. Singh, eds., *Accelerating Investment in Developing Countries* (London: Oxford University Press, 1969), p. 5.

One area in which such administrative phenomena can be observed is that of development project financing and project execution. For, although the ability of the development administration agencies to fully utilize annual development appropriations is often seen as an imperative for successful plan implementation, a host of factors typically intervene rendering it impossible to execute the projects in time or as initially envisaged. Government reports abound with instances of delays in foreign aid negotiations. And even where aid is procured in time, delays are experienced in the detailed preparation of project design or in the redesigning of earlier plans on account of new knowledge or donor insistence. More importantly, uncertainties in the construction industry seriously affect the pace of public capital formation. In the wake of independence and the Government's Africanization policies, many non-citizen firms producing building materials wound up and many building artisans left the country. The result has been a rapid rise in material and labour prices. Between 1966 and 1968, for instance, the price of sand rose by a phenomenal 57 per cent. Between 1968 and 1973, the price increases were as high as 39 per cent for sand and 10 per cent for unskilled labour. This of course means that even where administrative capacity to execute projects existed, the initial project appropriations would only purchase a portion of the assets originally planned for. The delays in aid negotiations, project design and bottlenecks in construction manifest themselves in persistent shortfalls between approved estimates and actual expenditures. The proportion of unutilized development funds range from 11 per cent for 1968/69 financial year to 25 per cent for 1966/67.<sup>13</sup> All these magnitudes manifest the problem of a poorly staffed public bureaucracy attempting to cope with a swiftly changing situation.

The other major shortcoming with regard to the project financing process is the failure to take account of the future operating expenses of capital projects. Peter Heller highlights this in a detailed study of the problem in Kenya.<sup>14</sup> Given the probable rates of growth in national income, recurrent expenditure and Government revenue, Heller's study demonstrates that recurrent revenues in future are bound to fall short of the required levels of operating expenses, should the present pace of public capital formation in Kenya continue. This will inevitably result in progressive deterioration of Government services in the form of medicine shortages in hospitals, unrepaired roads, schools without teachers, etc. To these 'natural' increases in recurrent expenditure one must add the 'occasional' commitments which cannot be accurately foreseen. Thus the deterioration of Local Government services led to the takeover of the functions relating to education, health and roads by the Central Government in 1970. This prompted increases in recurrent expenditure to the tune of £1.3 million for health and £7.7 million for education between

13 Provisional statistics for the financial years 1971/72 and 1972/73 show modest over-expenditures (5 per cent and 3 per cent respectively) on development expenditure. In real terms however, the figures show net under-expenditure.

14 Peter S. Heller, "The Dynamics of Project Expenditure and the Planning Process with Reference to Kenya," (Harvard University Ph. D. thesis, 1971). The general nature of the problem is discussed by Albert Waterston in *Development Planning* (Baltimore: Johns Hopkins Press, 1965), pp. 224-26.

the financial year 1969/70 and 1970/71 alone. The All Africa Trade Fair held in Nairobi in 1972 called for public expenditures worth £154,000. For the current year (1973) £471,541 has been set aside for the purpose of the 10th independence celebrations. None of these events is foreseen in the development plans for the respective years. In fact, the financial provisions for both the 'natural' and 'occasional' operating expenses are formulated as the problems arise; on an ad hoc, year-to-year, contingency basis. That of course is why with every budget, changes in tax rates, or the introduction of new taxes can never be ruled out. And in spite of this approach the Government has managed to fully finance its recurrent expenses since 1967 and to accumulate modest recurrent surpluses which from 1970-1973 amount to £42 million, almost one third of the periods' development expenditure.

Policy vacillations are also evident in the way economic decisions are made to placate interest groups. The regime is obliged to the 'comprador' alliance;<sup>15</sup> the privileged stratum of society comprising the public bureaucracy, progressive farmers, the petty bourgeoisie and the social annexe of the foreign capitalist enclave. In addition, political and economic bargains must be struck with those ethnic groups and regions to whom the regime feels politically indebted. The precise nature of the activities which arise from this kind of arrangement cannot be predicted accurately enough to be included in a systematic sequence of actions. Thus both the "Tripartite Agreements" of 1964 and 1970, requiring arbitrary 10 per cent increases in the labour force, were meant to mollify the unemployed. Neither of them was included in the development plans for the respective periods, the second agreement being announced barely six months after the 1970-74 plan was initiated. So too, we now witness the abolition of the Graduated Personal Tax (GPT) on account of mounting taxpayer discontent and the provincial administrations' reservations about collecting this unpopular tax.<sup>16</sup>

This same style of problem-solving is apparent in the Government's attempts to conciliate the African bourgeoisie. The 1967 Trade Licensing and Immigration Acts, basically intended to accelerate the Africanization of commerce, were formulated with minimum consultation with Government planners or the private sector, both of whom would almost certainly have opposed the measures.<sup>17</sup> In fact the implementation mechanisms of these acts were not immediately clear. They were worked out in the light of experience. Again, with regard to the remunerations in the bureaucracy, the Ndegwa Commission recommended across-the-board salary increases ranging from a whopping 50 per cent rise for some of the top grades to 10 per cent for others.

15 The phrase is Paul Baran's as in his *Political Economy of Growth* (New York: Monthly Review Press, 1957).

16 Note, contrary to this, that the 1970-74 plan forecasts that "the methods of assessing the Graduated Personal Tax will be improved so that the tax yield at existing rates is increased." Republic of Kenya, *Development Plan 1970-74* (Nairobi: Government Printer, 1969), p. 5.

17 See, Edgar Edwards, "Development Planning in Kenya since Independence," *East African Economic Review*, Vol. 4 (NS), No. 2 (1968), p. 10. Edwards was the Government's planning adviser.

The result was a hitherto unplanned for £14 million (or 15 per cent) increase in recurrent expenditure from 1969/70 to 1970/71. The motivation for the massive increase, candidly given by the Commission, is that the Government could not afford not to pay as this would disappoint the Civil Service.<sup>18</sup> Of some importance in this connection is the fact that the Government had previously committed itself, albeit vaguely, to instituting an incomes policy in the interests of equity and increased employment.<sup>19</sup>

Lastly, in connection with interest group appeasement, special mention must be made of the unforeseeable policy changes which can be made by unchallengeable Presidential fiat. The leadership style of President Kenyatta consists of hosting various local delegations in an informal atmosphere. This has become an excellent venue to seek the repeal of policies inimical to the economic interests of the groups in question or for seeking new favourable decrees. In this fashion we have witnessed the raising of producer milk prices leading to the conversion of some cash crop acreage into grazing pasture and to financial atrophy on the part of the Kenya Cooperative Creameries. In yet other instances the prices paid to wheat and pyrethrum farmers have been increased (with apparent economic justification in the case of wheat) although the current development plan's agricultural pricing policy favours the scaling down of the prices paid to pyrethrum, maize and wheat farmers.<sup>20</sup> Other policy changes might entail considerable revenue loss to the Treasury as resulted from the recent repeal of the traditional liquor tax at the behest of the brewers, leading to a £350,000 revenue loss to the Exchequer for 1973/74 financial year alone.<sup>21</sup> The adaptive mechanism to such a revenue shortage manifests itself in delayed or cut project funds. Such problems therefore stem from the nature of system politics and cannot be solved by a series of attractive programme charts drawn from a computer. This perhaps explains the strong tendency of system innovators to concentrate on rural planning which is (deceptively) free from Central Government power politics.

Rural plan implementation procedures, such as PIM, count heavily upon cooperation between provincial administration and the field officers of the executive Ministries notably agriculture, veterinary, social services and public works. Its linchpin is the coordination of these diverse agencies. However, there is little certainty that such cooperation will be automatically forthcoming. On the contrary, rural development administration in Kenya is characterized by the autonomy and independence of provincial administration coupled with strong 'departmentalism' among the technical departments. Imposing an Area Coordinator (AC) without formal power on this structure for the purposes of instituting systems procedures is wishful thinking at best. Cherry Gertzel provides an excellent factual account of the provincial administration's strong capacity to resist directives from the Ministry of Economic Planning and to

18 *Report on the Commission of Inquiry*, op. cit., p. 49.

19 *Development Plan 1970-74*, op. cit., pp. 135-136 where the Government proposes "a firmer grip over public sector wages and salaries" and "to reduce (sic) further the present salary differentials."

20 *Ibid.*, pp. 197-8.

21 *East African Standard*, 25 July 1973.

implement programmes at their own autonomous tempo;<sup>22</sup> a fact underscored by one Provincial Commissioner in his recent criticism of "vague and bulky professional literature" produced by planners in Nairobi. Local interest, in his view, was in "factual physical projects".<sup>23</sup> These inter-departmental cleavages lead to fragmentary efforts and duplication of functions. To make these departments conform to a standardized code of administrative behaviour would require a dose of coercive power the Government is obviously unwilling to expend, not a two week training in filling out multicoloured programme charts for a few coordinators. This is why in spite of their pious homage to PIM, Chabala, Kiiru and Mukuna still report problems of non-cooperation, delays in the release of funds, ritualistic observation of procedures, and the weakness of the ACs<sup>24</sup>—all symptomatic of the 'disorderly' administrative behaviour whose pervasiveness we have been trying to demonstrate.

The other important facet of rural development is that of self-help or *Harambee* schemes. With regard to these, the LPP (Local Participation Procedures) programme has been designed by Belshaw and Chambers. PIM to some extent is also concerned with programming local self-help effort. Yet this is the area which is least amenable to systematized procedures. How does one programme the implementation of self-help projects with local leadership whose control of the participants is tenuous and who could be trounced out of office by the local political boss at will? Furthermore, schisms from within self-help movements are commonplace leading to project delays or stoppages. This is partly because, for local political leadership, self-help projects constitute a leeway for consolidating local political support. The exact nature of the resulting political interplay is very difficult to anticipate. In fact not only don't we know how much capital investment goes into self-help activities but it has proved very difficult to anticipate which direction the general movement will take. From the immediate post-independence enthusiasm on secondary schools, self-help effort has diverged into hospitals, cattle dips, water supply and of late, the *Harambee* Institutes of Technology. The institutes, begun around mid- 1971, are hardly mentioned in the 1970-74 plan. Self-help projects themselves generate further economic distortions in the form of unemployable school leavers and additional financing of recurrent expenses for schools and hospitals.

Since self-help projects are prompted partly by local popular enthusiasm and partly by the political leaders themselves; to programme them in such a way that they conform to some form of plan would require some form of political regimentation. The opportunity cost would be the loss of political support to the regime. It is a cost few Governments would wish to incur. In the frank words of Labour Minister, Ngala Mwendwa on *Harambee* schools:

22 Cherry Gertzel, "Provincial Administration and Development in Kenya," paper delivered at the Universities Social Science Conference, Dar es Salaam, 1970.

23 *East African Standard*, 2 August 1973.

24 H. Chabala, D. Kiiru and S. Mukuna, "A Further Evaluation of the PIM System" (Nairobi: IDS. Working Paper No. 119).

It is hard to close *Harambee* schools and reduce their production . . . *they are a political thing* . . . and even though I am not very happy with what they are doing I myself am building these schools . . . this is political and cannot be helped.<sup>25</sup>

Thus, as intimated earlier, the authorities resort to adaptive mechanisms. The result is phased, sequential and selective takeover of the running of *Harambee* schools and health centres, and this is as subject to political pressures as the self-help projects themselves.

The vulnerability of systems analysis in plan implementation becomes obvious when one considers the many unpredictable aspects of foreign economic assistance. Foreign aid financed almost 100 per cent the Kenya development budget for 1964, a figure which has since dropped to 49 per cent for the 1973/74 financial year. The experience has been one in which levels of aid are influenced by the donor's balance of payments position and domestic politics. In addition the effectiveness of foreign aid in promoting local goals is strongly undermined by the fact that donors often promote their own sector and project priorities.<sup>26</sup> The situation is not very different for multilateral agencies either. The World Bank group is well known for advocating and executing projects which *they* feel the recipient country could benefit from.<sup>27</sup> The tendency of the United Nations Development Programme to promote its version of development projects and the competition between various UN agencies in East Africa is well documented by Susan Aurelia Gitelson.<sup>28</sup> The alternatives left to the implementing agencies are either to dispense with aid, a move which is very unlikely, or to adjust to this helter-skelter situation. A definite, systematic programme of implementation could only be adhered to if the donor Governments and multilateral agencies were made to conform to some grand international plan, a remote possibility to say the least.

#### THE RATIONALE OF 'DISORDERLINESS'

What then is the rationale underlying the observed administrative phenomena? The problems of instituting a systems management framework for plan implementation, which we have already outlined, originate from the fact that the administrative organizations in question are 'open' systems operating in the context of internal changes and environmental intrusions. Any hypothesis concerning the appropriate strategies for implementation under such circumstances must therefore begin from an understanding of administrative behaviour of open complex organizations. The effectiveness and efficiency of such organizations, Barnard tells us in his celebrated book on administration, is predicated on the administrative capacity to establish an equilibrium between, on the one hand, internal organizational demands and, on the other hand, the

25 *The Sunday Nation*, 29 October 1972.

26 *The ILO Report*, op. cit., pp. 575-77.

27 An authoritative statement to this effect can be found in "The Project Cycle," *Finance and Development*, June 1970.

28 Susan Aurelia Gitelson, "Multilateral Aid," *East Africa Journal*, Vol. 8, No. 2 (1971), and "How are Development Projects Selected: the Case of UNDP in Uganda and Tanzania," *The African Review*, Vol. 2, No. 2 (1972).

external problems.<sup>29</sup> In the context under discussion here, this means that the plan implementation machinery must cope with problems of incomplete information, changing internal demands as well as the realities of external uncertainty.

One of the most persistent internal organizational problems pertains to decision-making with imprecise knowledge of the development process as already outlined. Furthermore, planning must proceed in the absence of considerable factual data; "without facts" to use Stolper's famous phrase. Not only are market prices distorted, rendering the use of 'shadow prices' in project appraisal difficult, but topographical, hydrological, agronomic and biological data are often either lacking or incomplete. Yet systems planning requires such information so that project inputs and the exact process of converting them into the desired goals can be accurately programmed. In the absence of complete information, however, the implementing agencies are more likely to resort to Simons 'satisficing' behaviour; to seek satisfactory alternatives as opposed to those which unambiguously maximize given project goals.<sup>30</sup> In fact, from an economics of information standpoint, information gathering must not proceed beyond the point where marginal cost is equated with marginal benefits. This means, as Stigler counsels, that we must be content to operate with varying levels of optimal ignorance.<sup>31</sup> Like the project manager of the Kiambu Institute of Technology, who admitted frankly that his team did not know exactly what an "institute of technology" was supposed to do,<sup>32</sup> most implementing agencies proceed with considerable ignorance and imperfect information. In fact, Clive Gray has asserted that it would take, for most projects, "detailed feasibility studies lasting up to a decade before anyone can predict within a 50 per cent margin of error whether the benefit-cost ratio will be positive or, negative".<sup>33</sup> The pertinent issue then, it seems to me, is not to clamour for detailed feasibility and economic studies but to delineate the optimal ignorance a project can operate with. Chambers himself provides a detailed success story of the Mwea Irrigation Scheme which began under circumstances of almost unbelievable ignorance on physical, technical and economic aspects.<sup>34</sup> It goes to show that inadequate 'pre-planning' need not be the paramount precursor of faulty implementation it is always supposed to be. A lot depends on 'post planning' activities.

The other strategy which organizations utilize to counter the pervasiveness of incomplete information, therefore, is to leave goals and strategies vague and to clarify them in a series of successive policy decisions in the light of 'post-planning' realities. A variant of this strategy is the incremental adjustment of

29 Chester I. Barnard, *The Functions of the Executive* (Harvard University Press, 1938), pp. 82-3.

30 Herbert A. Simon, *Administrative Behaviour* (New York: The Free Press, 1965).

31 George J. Stigler, "The Economics of Information," *Journal of Political Economy*, 69, 3 (June 1961), p. 224.

32 *The Daily Nation*, 3 July 1973.

33 Clive S. Gray, "Development Planning in East Africa," *East African Economic Review*, Vol. 2 (NS), No. 2 (1966), p. 6. Gray's experience is derived from his work as a planner in the Kenya Government.

34 Robert Chambers, *Settlement Schemes in Tropical Africa* (New York: Praeger, 1969), pp. 43-136.

social overhead capital to directly productive activities (or vice versa), outlined by Hirschman.<sup>35</sup> This same approach is observable with regard to the sequential adjustments of current expenditure to additional social infrastructures; the 'financial myopia' which Heller so vehemently denounces. This approach is given a theoretical underpinning by Tibor Scitovsky in his now famous analysis of pecuniary externalities.<sup>36</sup> Under his scheme, additional investment in industry A will cheapen A's product, causing the profits of those industries using A's products as inputs to rise. These profits call for expansion in those industries, which in turn calls for expansion and investment in A. Thus in a series of see-saw activities this process is carried on until an equilibrium is reached. The incremental adjustment of road services to the expansion of tourist services and various cash crops in Kenya demonstrates the practical nature of this strategy. Admittedly, the strategy can be misused, leading to bottlenecks and underutilized capacity; and it may be completely impractical for most water-resource investments which are not very amenable to construction by stages. The acid test of sensible development administration, however, is the ability to spot such differences and to react in time to investment activities in complementary organizations which cannot be firmly programmed due to a host of unknowns and recurring uncertainty.

Should the above techniques to counter insufficient information prove unsatisfactory, the administrative organization in question then feels bound to fragment the policy problem into sub-problems which can then be handled by specialized sub-parts of the organization. This is why Bernard Schaffer's contention that decentralized bureaucracy with a latitude for departmental autonomy is better suited for development administration than the centralized, monolithic Weberian ideal type, makes so much sense.<sup>37</sup> Again the process may be carried too far; so much so that departmental goals supersede overall intentions or even replace them. Indeed it is this excess behaviour which gives rise to the perennial complaints about un-coordinated activities and inefficiency; the inadequacies which systems planning now claims it will rectify by an on-the-spot, organization-wide, information network. These complaints, however, must be balanced against the fact that most innovation within organizations originates precisely from these goal and procedural deflections by the departments.<sup>38</sup> For as long as we live in a world of uncertainties, policy fragmentation

35 A. O. Hirschman, *The Strategy of Economic Development* (Yale University Press, 1958), pp. 86-89.

36 Tibor Scitovsky, "Two Concepts of External Economies," in A. N. Agarwala and S. P. Singh, ed., *The Economics of Underdevelopment* (New York: Oxford University Press, 1965), pp. 295-308.

37 Bernard Schaffer, "Deadlock in Development Administration," in Colin T. Leys, ed., *Politics and Change in Developing Countries* (London: Cambridge University Press, 1969), pp. 177-211.

38 The point is made by James Q. Wilson that diversity of procedures within complex organizations increases the probability of innovation in "Innovation in Organization: Notes Toward a Theory," in J. D. Thompson, ed., *Approaches to Organisational Design* (Pittsburg University Press, 1966), pp. 193-218. Note also the 'sequential implementation procedure' at Kwale which the SRDP evaluation team found such a useful, replicable innovation but which was a deviation from centrally outlined SRDP procedures in *An Overall Evaluation of the SRDP*, op. cit., pp. 35-6.

is bound to occur, and reform must be geared, not so much to eliminating it as to keeping it within reasonable bounds.

The essentiality of policy fragmentation during the implementation process is enhanced all the more by the ever-present need to resolve latent or actual conflict among participating groups and members. The conflict avoidance tactics which come into play in such contexts are well known to political scientists and students of business organization: strong departments are permitted some goal autonomy; the sub-goals of participating members are attended to sequentially; lastly, and most importantly, attempts to make overall goals too specific are sidestepped as this would inevitably produce debate and dissension from among organizational ranks. This explains the already noted tendencies for donors, the political leadership, the provincial administration and other agencies, to develop their own goals even within the same development programme, and perpetual complaints from most planners and policy analysts that policy-makers fail to express their aims in specific and, preferably, quantifiable terms. To make sense, however, such complaints must be balanced against the degree of intra-organizational conflict which varying levels of goal specification and departmental autonomy will engender; for project management of whatever kind involves delicate balancing of goal-setting strategy on the one hand and internal conflict resolution on the other.

The plan implementation process as an open system must not only contend with such internal problems but also the vagaries of external uncertainty delineated earlier. The most potent organizational instrument to combat uncertainty and thus ensure reliability, Landau tells us, in a seminal paper, is redundancy.<sup>39</sup> It sounds paradoxical since redundancy is often associated with excess and waste. However, to enhance reliability, redundancy and duplication are extensively used in languages, natural automata and computer technology. The increasing use of dual braking systems, spare tyres, and a host of additional 'safety factors' to increase safety in automobile driving is something we all know. And in the domain of complex formal organizations we know that those agencies whose missions are most uncertainty-bound, such as fire departments, ambulance services and emergency hospitals and the police, have to operate 'overtime', often on a 24 hour basis. Thus they require spare or redundant resources at the ready in order to cope with unpredictable emergencies. Indeed, this is the underlying reason for some of the much lamented unspent budgetary appropriations; resources are kept redundant so that attractive projects can be snapped up whenever they arise and to satisfy the periodic, unpredictable political demands of the varieties outlined earlier. The Kenya Ministry of Works budgeted £3 million for unforeseeable construction during the period 1969/70 to 1973/74 and the last two Kenya development plans advocate, with the benefit of hindsight, that development expenditures for each Ministry should be set higher than anticipated actual spending,<sup>40</sup> as a method of introducing redundancy.

39 Martin Landau, "Redundancy, Rationality and the Problem of Duplication and Overlap," *Public Administration Review*, Vol. 29, No. 4 (1969), pp. 346-58.

40 Republic of Kenya, *Development Plan 1966-70* (Nairobi: Government Printer, 1966), p. 119 and *Development Plan 1970-74*, p. 385.

Complementary to the use of redundancy is duplication and overlap. Organizations ensure reliability by creating several mechanisms which can substitute for each other should one fail. Thus education in Kenya is not just a function of the Ministry of Education; Agriculture, Health, Community Development, Cooperatives, overseas and voluntary agencies all play important roles. It is this kind of duplication and overlap of departmental functions which PPBS is pledged to eliminate.<sup>41</sup> Yet even Chambers himself recognizes the positive aspects of certain forms of functional overlap in settlement scheme activity.<sup>42</sup> In the course of the SRDP it was established that the effective Area Coordinators relied on diplomatic, informal contacts and persuasion; or, put differently, on their ability to exploit *duplicate* channels of communication. Similarly, the much advertised benefits of Research and Development strategy (R and D) actually derive from judicious use of duplication and from the type of goal and process flexibility we have already been advocating.<sup>43</sup>

But should such uncertainty-combating strategies prove unsatisfactory, the implementing departments can then resort to uncertainty avoidance tactics. Hence the political machinations to fix agricultural prices, lower taxes for certain producers, and to reach agreements on some inputs and wages. The basic purpose is to increase joint incomes or profits collectively. Economists will recognize strong similarities between this and the 'cartel', price rigidity behaviour in oligopoly market structure; a situation of differentiated output, uncertain market demand curves and indeterminate reaction of one's competitors—all similar to the problems that confront Government agencies discussed earlier.

Development policy-making, then, whether at 'macro' project or implementation level is therefore more likely to succeed through tactful and judicious use of the unorthodox processes delineated here. And this is nothing more than an elaborated restatement of the challenges many practical policy-makers pose against the conventional optimizing prescriptions. It therefore concurs with W. Arthur Lewis' perceptive warning against designing macro-economic plans on rigid 'scientific' principles, and of the need to approach the whole issue with caution and flexibility.<sup>44</sup> Indeed, the reputed World Bank project implementation depends not so much on formal analysis and procedures as on the judgements of those with experience in many projects, under varying conditions and on their ability to deal with unquantifiable, changing

41 See, for instance, Melvin Ashen, "The Programme Budget in Operation," in David Novick, ed., *Programme Budgeting* (Harvard University Press, 1965), p. 359 for one such example.

42 Robert Chambers, *Settlement Schemes in Tropical Africa*, op. cit., p. 207.

43 In this connection it should be made quite clear that the R and D approach for rural development in Kenya, advocated in several of the studies cited here, is misconstrued. The success of R and D in American defence and industry has typically relied on flexible designations of the desired product, adjustable goal attainment strategies and duplication of experiments. See R. R. Nelson "The Efficient Achievement of Rapid Technological Progress," *American Economic Review*, Vol. 56, No. 2 (1966), pp. 232-41. The utility of this approach in economic development is suggested by A. O. Hirschman in *Development Projects Observed* (Washington: The Brookings Institution, 1967), pp. 75-81.

44 W. Arthur Lewis, "On Assessing a Development Plan," in I. Livingstone, ed., *Economic Policy for Development* (Penguin Books, 1971), pp. 405-17.

project characteristics.<sup>45</sup> It is precisely this kind of sheer organizational wit to skirt around ignorance and internal conflicts and to use redundancy and duplication at their optimum levels, that is being advocated here.

#### CRITICISMS OF THE STRATEGY

Critics will unhesitatingly point out that this approach emphasizes organizational effectiveness to the neglect of efficient resource use and much needed coordination. The kind of efficiency economists advocate in this context is the 'allocative efficiency' of the market variety and hence the use of 'shadow prices' in public project appraisal. Yet, even ignoring the prevalent market imperfections, this ignores other kinds of efficiency. Harvey Leibenstein has brilliantly demonstrated the superiority of 'X-efficiency' in the creation of additional firm output. 'X-efficiency' is derived from sources somewhat similar to the techniques advanced here: internal motivation; use of non-market inputs and the ability to react accordingly to external conditions principally in the form of competition.<sup>46</sup> From an entirely different approach Albert Hirschman has shown that the unprogrammed, unbalanced, 'cart-before-the-horse' techniques can sometimes be more efficient than programmed coordinated sequences.<sup>47</sup>

The more potent criticism, however, is that of the apparent absence of coordination; the more so because 'coordination' has become the standard, commonplace injunction whenever project implementation goes wrong. Coordination means effecting cooperation among diverse participants to achieve common goals. This entails the use of information, threats, incentives and as a last resort, coercion. This is the stuff every managerial or administrative job is made of. In this context, coordination is nothing more than a synonym of the entire administrative process.<sup>48</sup> It is an admonition to initiate better implementation procedures without specifying which ones and to what extent. As such it is merely a statement of the problem at hand: successful implementation requires improved administrative processes. It is certainly one of the great recurring tautologies in the development literature.

#### CONCLUSION

The various techniques in systems management now being purveyed in the African countries for improved plan implementation are only practicable in situations where the environment is fully described and policy-outcome relationship unequivocal. All that one needs, then, is to follow the delineated code of standard procedures undeviatingly to achieve the desired objectives. There is probably not a single development project which would fit this

45 John A. King, ed., *Economic Development Projects and their Appraisal* (Baltimore: Johns Hopkins Press, 1967), pp. 5-8.

46 Harvey Leibenstein, "Allocative Efficiency vs 'X-Efficiency,'" *American Economic Review*, Vol. 56, No. 3 (1966), pp. 392-415.

47 *The Strategy of Economic Development*, op. cit., pp. 77-83.

48 In what has been called an exemplary definition, Barnard defines formal organization as "a system of consciously co-ordinated activities or forces of two or more persons" in *The Functions of the Executive*, op. cit., p. 73 (emphasis mine).

scheme. That of course is why the team of social scientists who compiled the SRDP 'functional model' for project implementation had to resort to such naive examples as football and hockey to legitimize the adoption of their uniform principles, strategies and objectives for the entire programme. We need not stress that systems management itself derives considerable inspiration and rationale from systems engineering. Unlike most development programmes, however, these are situations in which the probability distribution of outcomes is known.

Rendering advice to the poor (and especially the Africans) has become a thriving industry; particularly when such advice is couched in quasi-scientific jargon. Although there might be instances when such advice might prove valuable, the inclination of this paper is that systems management is one innovation the development administration process could safely do without in Kenya and indeed in the rest of Africa.